

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1-36. (Canceled)

37. (Currently Amended) A method of manufacturing a semiconductor device, comprising the steps of:

forming a crystalline semiconductor film over an insulating surface; and

adding impurity elements that ~~shifts~~ shift an energy band of said crystalline semiconductor film to a portion of said crystalline semiconductor film which will come to an active region later to locally form an impurity region;

wherein said impurity region is formed so as to extend between source and drain regions, and at least two channel regions are separated from each other by said impurity region ~~be discontinuous on a joint portion between the active region and a drain region.~~

38. (Original) A method according to claim 37, wherein said crystalline semiconductor film forming step comprises the steps of:

forming an amorphous semiconductor film over said insulating surface;

holding catalytic elements that promote the crystallization of said amorphous semiconductor film on said amorphous semiconductor film;

crystallizing said amorphous semiconductor film through a heat treatment to transform said amorphous semiconductor film into a crystalline semiconductor film; and

gettering said catalytic elements remaining in said crystalline semiconductor film to a processing atmosphere through a heat treatment in an atmosphere containing halogen elements therein.

39. (Original) A method according to claim 37, wherein said crystalline semiconductor film forming step comprises the steps of:

- forming an amorphous semiconductor film on an insulating surface;
- holding catalytic elements that promote the crystallization of said amorphous semiconductor film on said amorphous semiconductor film;
- crystallizing said amorphous semiconductor film through a heat treatment to transform said amorphous semiconductor film into a crystalline semiconductor film; and
- introducing elements selected from the group XV into a predetermined region of said crystalline semiconductor film; and
- gettering said catalytic elements in said crystalline semiconductor film into which said elements selected from the group XV through a heat treatment.

40. (Original) A method according to claim 37, wherein elements selected from the group XIII are added to said impurity region with the concentration of 1×10^{17} to 1×10^{20} atoms/cm³.

41. (Original) A method according to claim 40, wherein the elements selected from the group XIII comprise one of boron and indium.

42. (Original) A method according to claim 37, wherein elements selected from the group XV are added to said impurity region with the concentration of 1×10^{17} to 1×10^{20} atoms/cm³.

43. (Original) A method according to claim 42, wherein the elements selected from the group XV comprise one of phosphorous, arsenic and antimony.

44. (Original) A method according to claim 37, wherein said crystalline semiconductor film has a polycrystalline structure or a substantially monocrystalline structure.

45. (Original) A method according to claim 44, wherein a main orientation face of said crystalline semiconductor film having a substantially monocrystalline structure is a {110} face.

46. (Original) A method according to claim 37, wherein said crystalline semiconductor film is obtained by crystallizing an amorphous semiconductor film.

47. (Original) A method according to claim 38, wherein said catalytic elements are one or plural kinds of elements selected from the group consisting of Ni, Co, Fe, Pd, Pt, Cu, Au, Ge, Pb and In.

48. (Original) A method according to claim 37, wherein said impurity region is formed through the ion implanting method.

49-60. (Canceled)

61. (New) A method of manufacturing a semiconductor device, comprising the steps of:
forming a semiconductor film comprising amorphous silicon on an insulating surface;
providing a metal containing material in contact with said semiconductor film for promoting crystallization;

crystallizing said semiconductor film;

adding a first impurity into a portion of the crystallized semiconductor film to form a pinning region;

adding a second impurity into the crystallized semiconductor film to form source and drain regions wherein said pinning region extends between the source and drain regions and at least two channel regions are separated from each other by said pinning region.